

10/568951

IAP20 Res'd PCT/PTO 22 FEB 2006

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of :
Taku HIRAYAMA et al. : **Mail Stop: PCT**
Serial No. NEW : Attorney Docket No. 2006-0227A
Filed February 22, 2006 :

MATERIAL FOR FORMING RESIST
PROTECTIVE FILM FOR LIQUID
IMMERSION LITHOGRAPHY PROCESS,
RESIST PROTECTIVE FILM FORMED BY
THE MATERIAL, AND METHOD OF
FORMING RESIST PATTERNS USING
THE MATERIAL

[Corresponding to PCT/JP2004/012204
Filed August 25, 2004]

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Pursuant to the provisions of 37 CFR 1.56, 1.97 and 1.98, Applicants request consideration of the references listed on attached form PTO-1449 and any additional information identified below in paragraph 3. A legible copy of each reference listed on the Form PTO-1449 is enclosed, except a copy is not provided for:

- ☒ each U.S. Patent and U.S. Patent application publication;
- ☐ each reference previously cited in the international application
PCT/_____; and/or
- ☐ each reference previously cited in prior parent application Serial No.
_____.

1a. ☒ This Information Disclosure Statement is submitted:

ATTACHMENT C

within three months of the filing date (or of entry into the National Stage) of the above-entitled application, **or**

before the mailing of a first Office Action on the merits or the mailing of a first Office Action after the filing of an RCE,

and thus no certification and/or fee is required.

1b. ☐ This Information Disclosure Statement is submitted

after the events of above paragraph 1a and prior to the mailing date of a final Office Action or a Notice of Allowance or an action which otherwise closes prosecution in the application, and thus:

(1) ☐ the certification of paragraph 2 below is provided, **or**

(2) ☐ the fee of \$180.00 specified in 37 CFR 1.17(p) is enclosed.

1c. ☐ This Information Disclosure Statement is submitted:

after the mailing date of a final Office Action or Notice of Allowance or action which otherwise closes prosecution in the application, and prior to payment of the issue fee, and thus:

the certification of paragraph 2 below is provided, and

the fee of \$180.00 specified in 37 CFR 1.17(p) is enclosed.

2. It is hereby certified

a. ☐ that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the Statement, or

b. ☐ that no item of information contained in the Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to the knowledge of the person signing the certification after making reasonable inquiry, was known to any individual designated in §1.56(c) more than three months prior to the filing of the Statement.

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3. ☐ Consideration of the following list of additional information (including any copending or abandoned U.S. application, prior uses and/or sales, etc.) is requested.
4. For each non-English language reference listed on the attached form PTO-1449, reference is made to:
- a. ☐ a full or partial English language translation submitted herewith,
 - b. ☒ a foreign patent office search report (in the English language) submitted herewith,
 - c. ☐ the concise explanation contained in the specification of the present application at page,
 - d. ☒ the concise explanation set forth in the attached English language abstract,
 - e. ☒ the concise explanation set forth below or on a separate sheet attached to the reference:
 - US 2003/0129534 corresponds to JP 2003-167352
 - US 5,631,314 & US 5,783,362 corresponds to JP 8-15859
 - US 2002/0161148 corresponds to JP 2002-234916
 - US 2002/0177067 corresponds to JP 2002-338634
 - EP 1 365 290 A1 corresponds to WO 02/065212
 - US 2003/0219682 corresponds to JP 2003-345026
5. ☒ A foreign patent office search report citing one or more of the references is enclosed.

Respectfully submitted,

Taku HIRAYAMA et al.

THE COMMISSIONER IS AUTHORIZED
TO CHARGE AND COLLECT AGENCY IN THE
FEES FOR THE DEPOSIT TO DEPOSIT
ACCOUNT NO. 28-0075

By Matthew M. Jacob
Matthew M. Jacob
Registration No. 25,154
Attorney for Applicants

MJ/kg
Washington, D.C. 20006-1021
Telephone (202) 721-8200
Facsimile (202) 721-8250
February 22, 2006

INFORMATION DISCLOSURE STATEMENT

FORM PTO 1449 (modified)

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICELIST OF REFERENCES CITED BY APPLICANT(S)
(Use several sheets if necessary)

Date Submitted to PTO: February 22, 2006

ATTY DOCKET NO.
2006-0227ASERIAL NO.
NEW

20/568951

APPLICANT
Taku HIRAYAMA et al.

IAP20 Rec'd PCT/PTO 22 FEB 2006

FILING DATE
February 22, 2006

GROUP

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	AA	2003/0129534	7/2003	Yamazaki et al.			
	AB	5,631,314	5/1997	Wakiya et al.			
	AC	5,783,362	7/1998	Wakiya et al.			
	AD	2002/0161148	10/2002	Harada et al.			
	AE	2002/0177067	11/2002	Kim			

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES NO	
	AF	2003-167352	6/2003	JP				
	AG	8-15859	1/1996	JP				
	AH	2001-133984	5/2001	JP			abstract	
	AI	8-95253	4/1996	JP			abstract	
	AJ	7-234514	9/1995	JP			abstract	
	AK	10-69091	9/1995	JP			abstract	
	AL	2000-275835	10/2000	JP			abstract	
	AM	10-120968	5/1998	JP			abstract	
	AN	99/49504	9/1999	WO			abstract	
	AO	62-65326	3/1987	JP			abstract	
	AP	2002-234916	8/2002	JP				
	AQ	2002-145962	8/2002	JP			abstract	
	AR	2002-338634	11/2002	JP				

OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)

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EXAMINER

DATE CONSIDERED

Sheet 2 of 2

INFORMATION DISCLOSURE STATEMENT

FORM PTO 1449 (modified)

ATTY DOCKET NO.
2006-0227A

SERIAL NO.
NEW

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U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

LIST OF REFERENCES CITED BY APPLICANT(S)
(Use several sheets if necessary)

APPLICANT
Taku HIRAYAMA et al.

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GROUP

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	AA	2003/0219682	11/2003	Wakiya et al.			
	AB						
	AC						
	AD						
	AE						
	AF						
	AG						

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES NO
	AH	1 365 290 A1	11/2003	EP			
	AI	02/065212	8/2002	WO			abstract
	AJ	2003-345026	12/2003	JP			
	AK	2004/088429	10/2004	WO			abstract
	AL	2004/079800	9/2004	WO			abstract
	AM	2004/074937	9/2004	WO			abstract
	AN	2004/068242	8/2004	WO			abstract

OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)

	AO	J. A. Hoffnagle et al., "Liquid immersion deep-ultraviolet interferometric lithography", Journal of Vacuum Science & Technology B17(6), Nov/Dec 1999, pgs. 3306-3309.
	AP	M. Switkes et al., "Immersion lithography at 157 nm", Journal of Vacuum Science & Technology B19(6), Nov/Dec 2001, pgs. 2353-2356.
	AQ	M. Switkes et al., "Resolution Enhancement of 157 nm Lithography by Liquid Immersion", Proceedings of SPIE Vol. 4691, 2002, pgs. 459-465.

EXAMINER

DATE CONSIDERED